WHAT IS CLAIMED IS:

1.   An error diffusion method applied to halftone processing for image data,

the image data comprising a plurality of pixels, the method comprising

the steps of:

5   dividing the image data into a plurality of image blocks;

selecting one of the pixels belonging to each of the image blocks as a

target pixel, wherein the target pixel is located on the boundary of the

corresponding image block;

assigning a predicted error to the target pixel; and

10   executing the error diffusion method on the rest of the pixels of the

image blocks according to the predicted error of the target pixels of the

image blocks.

2.   The method according to claim 1, wherein in the step of assigning, the

predicted error is assigned to be 0.

15   3.   The method according to claim 1, wherein in the step of assigning, the

predicted error is determined according to the error of a last pixel which

is adjacent to the target pixel, wherein the last pixel and the target pixel

do not belong to the same pixel block.

4.   The method according to claim 3, wherein the last pixel is adjacent to the

target pixel in either a transversal or a longitudinal direction.

5.   The method according to claim 4, wherein the image data is divided

into the image blocks according to the location of the image blocks.

6.   An error diffusion method applied to halftone processing for image data,

5   the error prediction method comprising the steps of:

dividing the image data into a plurality of image blocks, wherein each of

the image blocks comprises a plurality of image rows, each of which

comprises a plurality of pixels, and each of the pixels at least outputs an error;

selecting one of the pixels as a target pixel, wherein the target pixel is

10   located on a boundary of one of the image blocks;

assigning a predicted error of the target pixel; and

executing the error diffusion method on the rest of the rest of the pixels

of the image blocks according to the predicted error of the target pixels of the

image blocks.

15   7.   The method according to claim 6, wherein the step of assigning is to

assign the predicted error to be 0.

8.   The method according to claim 6, wherein in the step of assigning, the

predicted error is determined according to the error of a last pixel which

is adjacent to the target pixel, wherein the last pixel and the target pixel

do not belong to the same pixel block.

9.   The method according to claim 8, wherein the last pixel is adjacent to the

target pixel in either a transversal or a longitudinal direction.

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